

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 18 OCT 2005

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Applicant's or agent's file reference 00485WO	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/AU2004/000857	International filing date (day/month/year) 28 June 2004	Priority date (day/month/year) 27 June 2003	
International Patent Classification (IPC) or national classification and IPC Int. Cl. <sup>7</sup> G06F017/20			
Applicant COMMON GROUND PUBLISHING PTY LTD et al			

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
- a. ☒ (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:
- ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
- ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
- b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 1 March 2005	Date of completion of the report 5 October 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  J.W. THOMSON Telephone No. (02) 6283 2214

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/000857

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:
    - ☐ international search (under Rules 12.3 and 23.1 (b))
    - ☐ publication of the international application (under Rule 12.4)
    - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
  - ☐ the international application as originally filed/furnished
  - ☒ the description:
    - pages 1 – 36 as originally filed/furnished
    - pages\* received by this Authority on with the letter of
    - pages\* received by this Authority on with the letter of
  - ☒ the claims:
    - pages 37 – 46 as originally filed/furnished
    - pages\* as amended (together with any statement) under Article 19
    - pages\* 47 received by this Authority on 27 April 2005 with the letter of 27 April 2005
    - pages\* received by this Authority on with the letter of
  - ☒ the drawings:
    - pages 1/10 – 10/10 as originally filed/furnished
    - pages\* received by this Authority on with the letter of
    - pages\* received by this Authority on with the letter of
  - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
  - ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to the sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to the sequence listing (*specify*):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/000857

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 3 to 11, 14 to 33, 35 to 42	YES
	Claims 1, 2, 12, 13, 34	NO
Inventive step (IS)	Claims 3 to 11, 14 to 33, 35 to 42	YES
	Claims 1, 2, 12, 13, 34	NO
Industrial applicability (IA)	Claims 1 to 42	YES
	Claims	NO

## 2. Citations and explanations (Rule 70.7)

**D1:** CA-2411459-A1 (Suzuki et al.) 12 May 2003

**D2:** Clio: A Semi-automatic Tool for Schema Mapping (Hernandez, Miller, Haas, Yan, Ho, Tian) 2001

**D3:** CA-2223953-A (Gajraj) 5 December 1997

**Claims 1, 2, 12, 13 and 34**

The claims 1 and 2 are anticipated by citations D1, D2 and D3 and claims 12, 13 and 34 are anticipated by citation D1.

Citations D1, D2 and D3 each disclose methods of performing schema transformation wherein a first structured or marked-up document based on a first document type definition (DTD) or a document schema is transformed to a second or marked-up structured document based on a second DTD or document schema. Each citation D1, D2, and D3 discloses a method of transformation involving an intermediate process or layer in which a template, rule set, correspondence mapping or translation table is employed to establish a relationship between the first source and the second target document schemas. Each citation D1, D2, and D3 discloses a method of analysis or assessment of properties by which the relationship between source and target document schema is established.

The present claims 1 and 2 use the terms "...deconstruct and reconstruct..." These terms are construed to have the meaning of performing an analysis or assessment of specifically identified data within the document schema, to establish properties or attributes of that data and to utilise this determined information to establish a transfer mapping or relationship between the source and target documents.

Further the term "...interlanguage document type definition (DTD)..." is construed to mean an intermediate layer or interface between a source DTD and a target DTD for the purposes of transformation of the source document to the target document.

In the light of citations D1, D2 and D3, and the construction placed upon term "...deconstruct and reconstruct..." and "...interlanguage document type definition (DTD)..." claims 1 and 2 lack novelty and inventive step.

Similarly, in the light of citations D1 which disclose methods and system of performing schema transformation as discussed above, claims 12, 13 and 34 are found to lack novelty and inventive step.

See continuation of: Box No. V

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## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box No. V

**Claims 3 to 11, 14 to 33, 35 to 42**

The remaining claims 3 – 11, 14 – 33, 35 – 42 disclose features which are novel and possess an inventive step in the light of the cited prior art documents.

Independent claims 23, 28 and 39, and respective appended claims disclose features which are not observed in the prior art base. Independent claims 23, 28 and 39 disclose combinations of features which are not disclosed in the prior art base. Claim 23 discloses a method and apparatus which interpellates source data into a interlanguage DTD for transfer of marked-up data having structure and semantics from a first to a second schema involving various step including processing, interpreting filtering with one or more of four filters and determining an inherent taxonomic or schematic structure of the interlanguage DTD comprising tag relationships. Claim 28 is for an apparatus which enable the transfer of a first schema to a second schema which utilises tag reader, interpreter, and transfer mechanisms. Claim 39 claims a method comprising combination of features including improved usability of ontology driven system and interoperability between differing mark-up schemas for the creation, location and formatting of digital contents utilising various steps involving database management, organisation of tags of the respective schemas, automatic translation of DTD, selection of appropriate ontology and automatic translation of interlanguage DTD.

Dependent claims 3 – 11 and 14 – 33, 35 – 42 disclose features which are not observed in the prior art base. Features include:

- two overarching mechanisms, a superordination mechanism and a composition mechanism in which specific ontological tag-to-tag relationships are established;
- within the said superordination mechanism, one or more submechanisms establish further ontological relationships including hyponymy, hyperonymy, co-hyperonymy, antonymy and series;
- within the said composition mechanism, one or more submechanisms establish further ontological relationships including meronymy, co-meronymy, consistency and collectivity;
- the generation of tag-to-tag and field-to-field relationships using filter mechanisms including taxonomic distance, level of delicacy, potential semantic incursion and translation of silent into active tags and vice versa;
- associated use of dictionary and thesaurus;
- use of five semantic rules including minimised ambiguity, functional clarity, lowest common denominator semantics, destination of silent and active tag-concepts and comprehensive internal cross-reference; and
- translating a query against data in the interlanguage DTD to queries against data in any of the schemas supported by the interlanguage DTD.

In the light of the prior art and in particular the aforementioned citations, the combination of features disclosed in the claims 3 – 11, 14 – 33, 35 – 42 of the present invention are novel and demonstrate an inventive step.

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42. A method of translating a query against data in the interlanguage DTD to queries against data in any of the schemas supported by the interlanguage DTD. Using the same rules described above in claim 40, the dataset against which the query is run can return a set of results from data based on  
5 heterogeneous schemas, as long as those schemas have been mapped against the interlanguage DTD.